

## ABSTRACT

A multilayer holographic recording medium in which a recording density and a data transfer rate are largely improved, a manufacturing method of the same, a multilayer holographic recording and reproducing method, a multilayer holographic memory reproducing apparatus, and a multilayer holographic recording and reproducing apparatus are provided.

A multilayer holographic recording medium 10 from which information is reproduced by a multilayer holographic memory reproducing apparatus 36 includes a plurality of deposited holographic recording layers 14A, 14B, 14C, ... During recording, a reference beam is common to those holographic recording layers and an incident angle of an object beam is modulated for each holographic recording layer. During reproduction, a laser beam for reproduction having the same condition as that of the reference beam used for recording is projected thereonto, so that diffraction beams are simultaneously generated in the respective holographic recording layers 14A, 14B, ... to directions that are the same as incident directions of the object beam used for recording.